

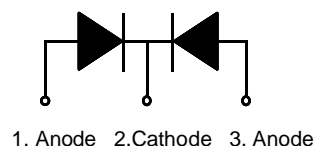
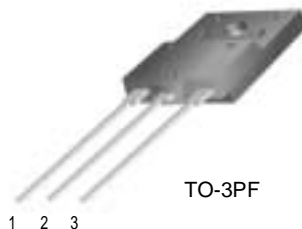
## FFAF15U20DN

### Features

- Ultrafast with soft recovery
- Low forward voltage

### Applications

- Power switching circuits
- Output rectifiers
- Freewheeling diodes
- Switching mode power supply



## ULTRA FAST RECOVERY POWER RECTIFIER

### Absolute Maximum Ratings (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{RRM}$	Peak Repetitive Reverse Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	15	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	150	A
$T_J, T_{STG}$	Operating Junction and Storage Temperature	- 65 to +150	$^\circ\text{C}$

### Thermal Characteristics

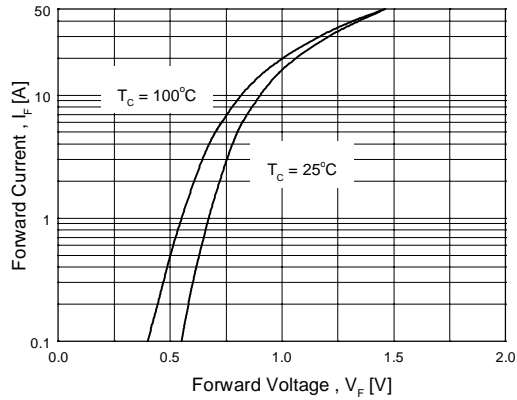
Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	3.1	$^\circ\text{C/W}$

### Electrical Characteristics (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

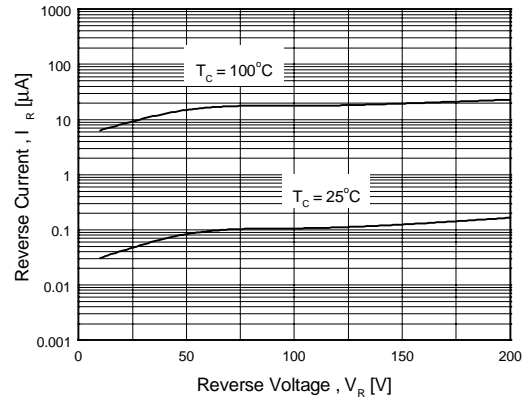
Symbol	Parameter	Min.	Typ.	Max.	Units
$V_{FM}^*$	Maximum Instantaneous Forward Voltage				V
	$I_F = 15\text{A}$	-	-	1.2	
	$T_C = 25^\circ\text{C}$	-	-	1.0	
$I_{RM}^*$	Maximum Instantaneous Reverse Current				$\mu\text{A}$
	@ rated $V_R$	-	-	15	
	$T_C = 25^\circ\text{C}$	-	-	150	
$t_{rr}$	Maximum Reverse Recovery Time	-	-	40	ns
$I_{rr}$	Maximum Reverse Recovery Current	-	-	3.5	A
$Q_{rr}$	Maximum Reverse Recovery Charge ( $I_F = 15\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )	-	-	70	nC
$W_{AVL}$	Avalanche Energy	0.5	-	-	mJ

\* Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle=2%

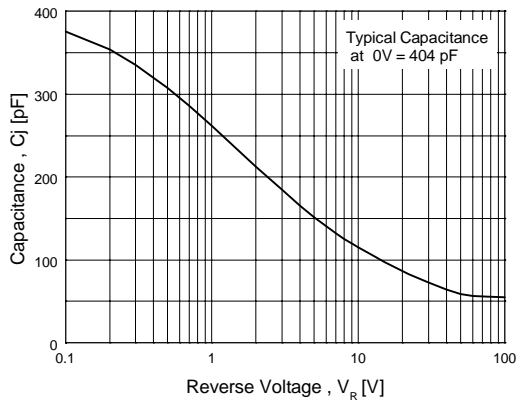
## Typical Characteristics



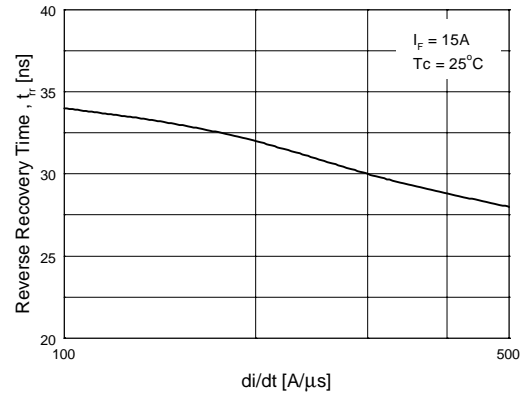
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



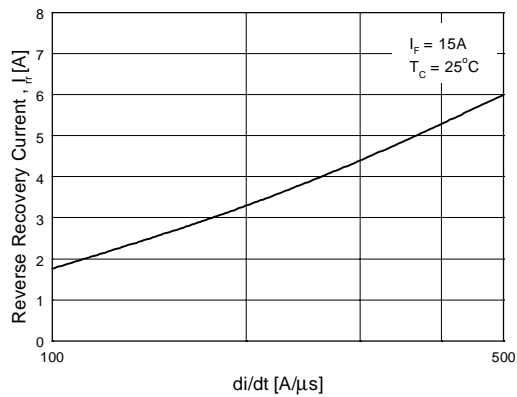
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



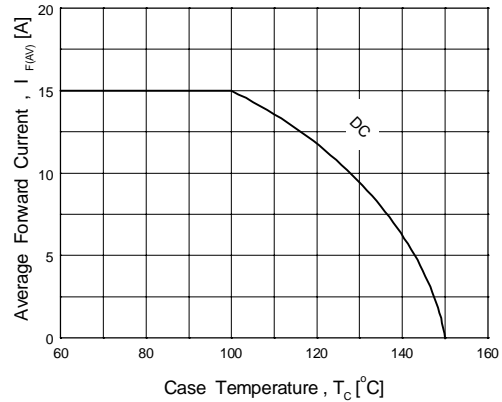
**Figure 3. Typical Junction Capacitance**



**Figure 4. Typical Reverse Recovery Time vs. di/dt**



**Figure 5. Typical Reverse Recovery Current vs. di/dt**



**Figure 6. Forward Current Derating Curve**

**FFAF15U20DN**

Technical drawing of a mechanical part, showing three views: Front View, Side View, and End View. Dimensions are given in millimeters (mm) with tolerances.

**Front View Dimensions:**

- Overall Width:  $15.50 \pm 0.20$
- Overall Height:  $26.50 \pm 0.20$
- Top Flange Height:  $4.50 \pm 0.20$
- Central Slot Height:  $16.50 \pm 0.20$
- Slot Width:  $14.50 \pm 0.20$
- Pin Diameter:  $5.45 \text{ TYP}$  [ $5.45 \pm 0.30$ ]
- Pin Spacing (Center-to-Center):  $2.00 \pm 0.20$
- Pin Length (from slot bottom):  $14.80 \pm 0.20$
- Pin Tip Tolerance:  $0.75^{+0.20}_{-0.10}$
- Bottom Flange Height:  $2.50 \pm 0.20$
- Pin Diameter (bottom):  $5.45 \text{ TYP}$  [ $5.45 \pm 0.30$ ]

**Side View Dimensions:**

- Overall Height:  $22.00 \pm 0.20$
- Top Flange Height:  $5.50 \pm 0.20$
- Slot Height:  $10.00 \pm 0.20$
- Chamfer Angle:  $10^\circ$
- Chamfer Width:  $0.85 \pm 0.03$
- Pin Diameter:  $5.45 \text{ TYP}$  [ $5.45 \pm 0.30$ ]
- Pin Length (from slot bottom):  $16.50 \pm 0.20$
- Pin Tip Tolerance:  $0.90^{+0.20}_{-0.10}$
- Bottom Flange Height:  $1.50 \pm 0.20$
- Pin Diameter (bottom):  $5.45 \text{ TYP}$  [ $5.45 \pm 0.30$ ]

**End View Dimensions:**

- Overall Width:  $5.50 \pm 0.20$
- Overall Height:  $3.30 \pm 0.20$
- Pin Diameter:  $5.45 \text{ TYP}$  [ $5.45 \pm 0.30$ ]

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